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FOR THE COMMANDER

Thomas J. Alpert, Major, USAF
Chief, ESD Lincoln Laboratory Project Office

FOREWORD

Volume 12 of Unclassified Publications of Lincoln Laboratory lists reports published from 31 December 1985 to 31 December 1986, as well as updated information on earlier publications.

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6870	Optical Design for Laser Diode Based Communication Utilizing Heterodyne Detection	Richardson, M.F.	SPIE, Vol. 554, *International Lens Design Conference*, 1985, pp. 327-330 ADA168215
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6886	A Microprocessor-Controlled High-Field Instrument for Measurement of Intrinsic Magnetization Phenomena	Weiss, J.A. Dionne, G.F.	J. Magn. Magn. Mater., Vol. 54-57, 1986, pp. 1647-1648 ADA167278
6887	KS Variables in Precision Orbit Determination	Gaposchkin, E.M.	*Astrodynamics 1985, Volume 58, Advances in the Astronautical Sciences*, 1986, pp. 1019-1040 ADA168295
6889	Millimeter-Wave Monolithic Circuits for Receiver and Transmitter Applications	Chu, A. Courtney, W.E. Mahoney, L.J. Clifton, B.J.	Electro/85, 23-25 April 1985, pp. 1-5

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6890	Integrated-Optical Components for Fiber Gyroscopes	Johnson, L.M.	SPIE, Vol. 566, *Fiber Optic and Laser Sensors III*, 1985, pp. 96-98 ADA167624
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6927	Effect of Doping Profile Variation on the Performance of the Permeable Base Transistor	Gopinath, A. Rankin, J.B.	Proc. IEEE/Cornell Conf. on Advanced Concepts in High Speed Semiconductors, July 1985, pp. 82-91
6933	Persistent Photoconductivity in Resonant Tunneling Structures: Toward a Resonant Tunneling Transistor	Sollner, T.C.L.G. Le, H.Q. Correa, C.A. Goodhue, W.D.	Proc. IEEE/Cornell Conf. on Advanced Concepts in High Speed Semiconductors, July 1985, pp. 252-260
6935	AlGaAs Optoelectronic Devices on Monolithic GaAs/Si Substrates	Windhorn, T.H. Metze, G.M.	SPIE, Vol. 587, *Optical Fiber Sources and Detectors*, 1985, pp. 158-163 ADA174013
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6940	Fabrication and Performance of GaAs Permeable Base Transistors	Nichols, K.B. Hollis, M.A. Bozler, C.O. Gale, R.P. Murphy, R.A.	Proc. IEEE/Cornell Conf. on Advanced Concepts in High Speed Semiconductors, July 1985, pp. 61-71
6946	Hyperbolic Householder Transformations and the Solution of Least Squares Equations	Rader, C.M. Steinhardt, A.O.	IEEE Proc. 19th Asilomar Conf. on Circuits, Systems & Computers, 6-8 November 1985, pp. 436-440
6949A	Propagation Effects on Radar Ground Clutter	Ayasli, S.	Proc. 1986 IEEE National Radar Conf., 12-13 March 1986, pp. 127-132

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6952	Prospects for Printing Very Large Scale Integrated Circuits with Masked Ion Beam Lithography	Randall, J.N.	J. Vac. Sci. Technol. A, Vol. 4, No. 3, May/June 1986, pp. 777-783 ADA170467
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6959	Polarization Tracking for Optical Heterodyne Communication	Jayaraman, V. Chan, V.W.S.	J. Opt. Soc. Am., Vol. 2, No. 13, December 1985, p. P58
6960	SAW/FET Programmable Transversal Filter with 100-MHz Bandwidth and Enhanced Programmability	Oates, D.E. Smythe, D.L. Green, J.B.	Proc. IEEE 1985 Ultrasonics Symp., Vol. 1, pp. 124-129 ADA168205
6961	Autocalibrating Circuitry for Processing SAW Convolver Outputs	Fischer, J.H.	Proc. IEEE 1985 Ultrasonics Symp. Vol. 1, pp. 134-139 ADA168317
6962A	Clutter Suppression for Low Altitude Wind Shear Detection by Doppler Weather Radars	Mann, D.R. Evans, J.E. Merritt, M.W.	23rd Conf. on Radar Meteorology, Vol. 1, 22-26 September 1986, pp. 9-13
6967	Single-Cell Concepts for Obtaining Photovoltaic Conversion Efficiency Over 30%	Fan, J.C.C.	Proc. 18th IEEE Photovoltaic Specialists Conf., 21-25 October 1985, pp. 28-32
6970	High-Efficiency Double-Heterostructure AlGaAs/GaAs Solar Cells	Gale, R.P. Fan, J.C.C. Turner, G.W. Chapman, R.L.	Proc. 18th IEEE Photovoltaic Specialists Conf., 21-25 October 1985, pp. 296-299 ADA167415
6984	Balanced Monolithic Mixer for Use at 44 GHz	Clifton, B.J. Chick, R.W.	Tenth Intl. Conf. on Infrared & Millimeter Waves, Conf. Digest, 9-13 December 1985, pp. 273-274

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6990	Hyperbolic Householder Transformations, Definition and Application	Rader, C.M. Steinhardt, A.O.	Proc. IEEE-IECEJ-ASJ Intl. Conf. on Acoustics, Speech, Signal Proc., 8-11 April 1986, pp. 2511-2514
6995	Diode-Laser Infrared Heterodyne Radiometer at 28 μm	Spears, D.L. Reeder, R.E.	Tenth Intl. Conf. on Infrared & Millimeter Waves, Conf. Digest, 9-13 December 1985, pp. 75-76
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6999	Silhouette Understanding System	Verly, J.G. Van Hove, P.L. Walton, R.L. Dudgeon, D.E.	Proc. IEEE-IECEJ-ASJ Intl. Conf. on Acoustics, Speech, Signal Proc., 8-11 April 1986, pp. 1457-1460 ADA172741
7001	Planar Dipole-Fed Mixer Arrays for Imaging at Millimeter and Submillimeter Wavelengths	Taylor, J.A. Sollner, T.C.L.G. Parker, C.D. Calviello, J.A.	Tenth Intl. Conf. on Infrared & Millimeter Waves, Conf. Digest, 9-13 December 1985, pp. 187-188
7008	Picosecond Photodetectors Fabricated in GaAs Layers Grown on Silicon and Silicon-on-Sapphire Substrates	Turner, G.W. Metze, G.M. Diadiuk, V. Tsaur, B-Y. Le, H.Q.	IEEE Intl. Electron Devices Mtg., I-4 December 1985, pp. 468-470 ADA164974

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7011	Phase Modeling and Its Application to Sinusoidal Transform Coding	McAulay, R.J. Quatieri, T.F.	Proc. IEEE-IECEJ-ASJ Intl. Conf. on Acoustics, Speech, Signal Proc., 8-11 April 1986, pp, 1713-1715
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7016	Wideband Array Processing for Acoustic Detection and Tracking of Aircraft	Dudgeon, D.E.	IEEE Proc. 19th Asilomar Conf. on Circuits, Systems & Computers, 6-8 November 1985, pp. 263-266
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7021	Linewidth Reduction of Semiconductor Diode Lasers	Harrison, J. Mooradian, A.	Springer Ser. Opt. Sci., Vol. 49, 1985, pp. 354-357
7023	High Speed Synthesizers for Satellite Application	Berglund, C.D. Siemasko, J.F. Crocker, E.A. Parr, R.J.	AIAA 11th Communication Satellite Systems Conf., 17-20 March 1986, pp. 352-360 ADA167507
7031	Semi-Automated Detection of Interplanetary Objects	Taff, L.G. Yakutis, A.J. Haase, R.L. Jonuskis, D.M.	SPIE, Vol. 627, *Instrumentation in Astronomy VI*, 1986, pp. 155-161

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7044	CCD Spatial Light Modulators Using Electroabsorption Effects in Multiple Quantum Wells	Burke, B.E. Goodhue, W.D. Nichols, K.B.	SPIE, Vol. 613, *Nonlinear Optics and Applications*, 1986, pp. 124-129 ADA174052
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7085	A Ferrite Bonding Method with Magnetic Continuity	Dionne, G.F. Fitzgerald, J.F.	IEEE Trans. Magn., Vol. MAG-22, No. 5, September 1986, pp. 620-622

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7102	SAW Convolvers and Signal Processing in a Packet Radio	Fischer, J.H. Cafarella, J.H. Flynn, G.T.	1986 IEEE MTT-S Intl. Microwave Symp. Digest, 2-4 June 1986, pp. 565-567
7103	Overview of an Artificial Intelligence System for Gust Front Recognition and Tracking	Olson, S.H.	23rd Conf. on Radar Meteorology, Vol. 1, 22-26 September 1986, pp. 22-25
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7221	Advances in Far-Infrared Heterodyne Detectors	Brown, E.R. Tannenwald, P.E.	SPIE, Vol. 666, *Far-Infrared Science and Technology*, 1986, pp. 38-50

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